



**PHILIPS**

Horticulture  
LED Solutions

Case study  
Greet Biesbrouck BVBA

Pecq, Belgium



Philips GreenPower LED interlighting

20% higher yields  
**for several tomato  
varieties**

“We want to differentiate ourselves by the quality we deliver...”



“

We place strict requirements on varieties, presentation, nutrition, pruning strategy and spacing **in order to optimize quality.**”

Luc Coghe, Owner Greet Biesbrouck BVBA



### Background

Luc Coghe and his wife, Greet Biesbrouck, originally come from Ardoorie in the Flemish part of Belgium, and they established their first tomato nursery there on 2.7 hectares. When they looked to increase their capacity, they found a suitable location in Wallonia, and built a new 7 hectare greenhouse there. Coghe manages the daily operations of the new nursery, while Biesbrouck runs the original nursery. The fact that the company is a member of Tomabel, the Belgian Grower's Association, says a lot about these growers. Tomabel is a quality label that was created as a reaction to bulk products. The Coghe family grows special varieties like Kanavaro; the small loose beefsteak tomato, Plaisance; the round truss tomato, and Brioso; the truss cocktail tomato. Quality and taste are the most important drivers for these growers.

### The challenge

When the new greenhouse was built in 2010, Coghe equipped 2.6 hectares of the facility with Philips HPS lighting with a light intensity of  $170 \mu\text{mol}/\text{m}^2/\text{s}$ . The reason for doing this was to create a better division of

labor and a higher yield by producing crops during the winter period. In 2014 Coghe decided to expand the areas of his facility equipped with grow lights in order to further increase the yield. Together with his adviser, he worked out two options: installing HPS lights in an additional 2 hectare section or hanging LED interlighting in the existing grow light section as a supplement to the HPS lights. Before making the decision, Coghe visited his Dutch colleagues Jami in Bergschenhoek (large truss tomatoes) and Wim Peters in Someren (plum tomatoes and Tasty Tom). “They were convinced of the advantages of LED interlighting. We calculated that the investment was sound,” says Coghe, “and we decided to invest in LEDs.”

### The solution

In October 2014 the tomato grower had 6,600 Philips GreenPower LED interlighting modules installed in the area with HPS lighting. Each row hangs at the height of the fourth truss and has a capacity of  $55 \mu\text{mol}/\text{m}^2/\text{s}$ . The modules are raised every week as the plants grow.

The HPS lights are ideal for lighting plants in the fall, winter, and spring. Usually the lighting season ends around the 1st of April because of the warmth the lights produce. With the LEDs, Coghe can now keep the lights on longer. In the 2014/2015 season he used the HPS and LEDs to light his crops until April 1st. After that he continued using just the LEDs to light his crops up to May 1st. After that, he periodically used the modules from sunrise to the moment the light level reached 250 watts. At first Coghe did not have to change much in his way of working. For instance, he chose the same distance between plants and the same temperature regime. Still, he had to make some adjustments to meet the new situation; such as applying more warmth. For the 2015/2016 season he decided to plant the tomatoes earlier and closer to each other to ensure more continuous yields.

### Benefits

Coghe is impressed with the first results from the LED interlighting. “The quality of the fruit is impressive,” he says. “The tomatoes are more consistent and the green parts are heavier, but the most striking difference is the taste which is clearly better.” This is true for all three varieties they grow. The yield is more consistent than before as well. By week twenty (11-15 May 2015), the grower had increased production by 8 kg/m<sup>2</sup> compared to the areas using solely HPS lighting. That is a production increase of 20%. The higher yields continued until the end of the growing season. “Ideally I would like to increase the production even more, but I think I need a few more years of experience to do that. We want to differentiate ourselves by the quality we deliver and we hope that that is worth a slightly higher price,” Coghe says.



“

With the LEDs we could use the lighting much longer, **even during the summer”**

**Luc Coghe**, Owner Greet Biesbrouck BVBA



## Facts

### Horticulturalist/grower

Greet Biesbrouck and Luc Coghe

### Sector

Vegetables and fruit

### Crop

Tomatoes

### Location

Pecq, Belgium

### Solution

Philips GreenPower LED interlighting

### Philips LED Horti Partner

Mais Automatisering

### Results

20% yield increase, better quality and better taste



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